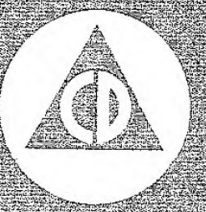
UNITED STATES
CIVIL DEFENSE

BASIC COURSE FOR CIVIL DEFENSE



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FEDERAL CIVIL DEFENSE ADMINISTRATION

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(Instructor's Guide)

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INTRODUCTION

Purpose

This guide presents a basic course in civil defense. Civil defense, which President Eisenhower has termed a "sheer necessity" in the day of H-bombs and the other weapons of modern war, is based mainly on an early warning and the planned, orderly evacuation of our target cities. It encompasses many other defense measures as well. It affects every man, woman, and child in the Nation.

This course covers information needed by all civil defense workers. It describes the organization and operation of civil defense and explains certain basic techniques for survival. Instruction in first aid has not been included in this guide since the American National Red Cross has agreed to give first-aid training to civil defense workers and the general public.

The Red Cross will also:

1. Give training in home care of the sick and injured, and in nurses' aide activities.

2. Assist civil defense organizations in providing food, clothing, and temporary shelter on a mass care basis during an immediate emergency period.

3. Participate in supplying the national needs for blood.

4. Make available volunteers and resources from local chapters for civil defense.

All civil defense workers should take the Red Cross Standard First-Aid Course, or the Bureau of Mines First-Aid Course, as well as this basic course. Complete civil defense training includes this course, and specialized courses in the various services.

Flexibility of Use

The needs of the local community will determine the most advantageous manner of using this course. It may be used to give general civil defense training to:

1. Volunteer workers who are already in one of the civil defense services. This course may be given either prior to or as part of their specialized training. In this plan job selection and assignment aspects of the course need not be emphasized.

2. Volunteer workers trained only in a specialized civil defense service. In a few isolated cases workers might discover that their efforts would be more valuable if they were placed in some other service.

3. Groups of potential volunteer workers. Used in this way as an introduction to civil defense, it can serve as a means of motivation, guidance, and placement.

4. Volunteer workers dissatisfied with their present assignments. For these persons the course should be given with special emphasis on guidance and placement. It would thus be a means of reviving their interest.

5. Civic groups, school organizations, or other citizens in the community desiring information on civil defense. Used in this way the course would help to insure a sympathetic public and provide a source of potential volunteers.

The course may be used in any one or more of the above ways, depending upon the needs that may develop in the local training program.

Suggestions for the Instructor

With this guide alone you can present the basic course. However, if you use reference materials listed in this guide and any other suitable material, so much the better. Your instruction will be more effective if you use visual aids, such as bulletin boards, blackboards, charts, movies, slides, filmstrips, dramatic skits, models, mockups, maps, and sand tables whenever applicable.

You might arrange field trips for your group to control centers, staff headquarters, or other civil defense activities in your community.

If members of the group have not already been given specific civil defense assignments, job selection guidance and placement should be emphasized during the course. Proper placement should be made upon the basis of the volunteer worker's interests, training, and experience.

The material in this guide is divided into units to be presented at five sessions. The length of

the sessions may be varied according to the needs of each group. Generally, 2 hours is considered the maximum time. Each session should have at least one short rest period or break. If necessary, the course may be reduced in length, or if the group requires it, some of the sessions might be extended over two or more meetings.

You may wish to hold the first session with one large group rather than several smaller groups, if several classes are being started at once. Civil defense and official community leaders can assist in getting the training program off to a good start. The final session might also include several classes finishing within the same week. Formal commencement exercises should be held if possible and certificates of completion awarded by a leading community figure.

Use your own judgment on how best to present each part of this course. Don't memorize or read it off. Master the material as thoroughly as possible ahead of time, so that you can give the course in your own words, with your own illustrations, and your own questions. Be natural; don't talk down or up to the group. Wear a civil defense arm band or other insignia. Impress upon your listeners the gravity of the situation and the urgency of the training program. Do everything you can to draw out your group, discuss points with them, rather than simply telling them.

The more group participation, questions, and discussion, the more successful the course will be. Give members of the group opportunities to express their ideas, experiences, and opinions.

If you are asked a question you can't answer, don't be afraid to say you don't know the answer. You are not supposed to be an expert in each phase of this course. If such a situation arises, look up the information and bring it back to the next session.

Make a lesson plan for each session of this course. Explained in the FCDA instructor's guide *How To Instruct in Civil Defense* is a four-step method of instruction. This method is especially effective in teaching skills. An outline of the four-step method is as follows:

(*a*) Motivation.
  (1) Relate each session to previous sessions which contained material on the same subject.
  (2) Connect this lesson with the experience of the group members from your knowledge of them.
  (3) State your objective—the purpose and scope of the lesson and how each group member can personally benefit from the information in the lesson.

(*b*) Presentation.
  (1) Use the body of material presented here for the session, together with all the visual and other aids available to you.

(*c*) Rehearsal (participation).
  (1) Get your group to practice their newly acquired skill where possible. If this is not possible or if the subject matter is primarily informational, use group discussion and questions.

(*d*) Checkup.
  (1) When you think your group thoroughly understands the material, you may close the session with a written or performance test. If written, questions may be in true-false, multiple choice, matching, or completion form. Allow sufficient time for the test. Read off the answers while each person corrects his own paper. If you have time discuss the test questions.
  (2) If you prefer, the test may be given orally in the form of discussion questions.
  (3) Another alternative would be to give the test at the end of the course.

At the close, give an assignment for the following session, stressing any preparation you wish the group members to make.

At various places throughout this guide will be found material in boldface type. This material is composed of suggestions for the instructor and is not to be regarded as subject matter.

FUNCTIONS OF CIVIL DEFENSE

Instructor's objective: To develop an understanding of civil defense as it applies to each member of the group, and to prepare each member of the group for the instruction to follow in other sessions.

Before beginning this session review the suggestions for ways of using this instructor's guide and determine whether you are going to emphasize job selection and assignment. Learn all you can about the members of the group beforehand, so that you can open the session with remarks pertinent to the personal experiences of the group.

Speaker for Session I.

Instead of giving the entire session yourself you might arrange to have the mayor, director of civil defense, or other community leader give the first part of the instruction, covering the following:

(1) Civil defense defined.
(2) The need for civil defense (national and international situation).
(3) Long-range civil defense.

Outline ahead of time the subject matter you would like the speaker to cover and tell him the approximate length of time you would like him to talk.

If there should be an atomic attack on the United States, the civilian population would probably come under attack immediately. Our principal cities would probably be hit simultaneously.

Our survival will depend on the ability of our civilians to recover as rapidly as possible after the first blow.

In most States civil defense forces have the additional duty of combating natural disasters and consequently have acquired some practical experience.

Whether an area has been devastated by a tornado or by a nuclear bomb, it presents similar urgent problems. Much of what you need to know and the tools you need are the same. For combating the effects of a nuclear bomb more trained people are needed. That's why we are here now—to get that training.

Find out what the group thinks civil defense is. Then give them this definition:

Civil defense is basically the voluntary efforts of people, individually and in groups, together with local, State, and national governmental departments and agencies, to protect themselves, their families, homes as well as commercial and industrial establishments and other community facilities such as schools and recreational and social agencies against the effects of warfare and natural disasters.

An old American concept in action.

This concept of protection is not a new one in the American way of life. In colonial times our forefathers banded together to fight off their enemies; they went in groups to help each other clear land for a new farm in the wilderness; they mutually solved their problems in the old town meeting. In more recent times this concept is exemplified in the mutual aid of the threshing crew consisting of neighboring farmers helping each other. The volunteer fire department that many communities have is another form in which this idea is expressed:

Long-Range Civil Defense

We are vulnerable today because of technical developments in warfare since World War II. We may be more vulnerable tomorrow as these advancements in warfare continue. Our long-range civil defense planning must continue so long as the peace of the world is threatened.

Civil defense as a deterrent to aggression.

What is long-range civil defense? It is building a civil defense so strong and well-organized as to deter aggression. The program must be developed now—if we wait until we are attacked, it will be too late.

Make an effort to put these thoughts in your own words. Talk to the group, don't preach.

Individual Participation in Civil Defense

What is individual participation in civil defense? It is the contribution in terms of thought, time, and energy on the part of all of us to make our community so strong that we can survive the toughest treatment the enemy can deal out.

Civil defense is everyone's business.

Civil defense is each person's business. Regardless of whether we live in a large industrial city, in a medium-sized town, in a village, or on a farm, civil defense is our business. There is a job in civil defense for each of us. It is the duty of every citizen to find out what that job is and how to do it.

Determining Your Job in Civil Defense

To find your job you must first learn how civil defense operates and the action you can take to protect yourselves and your families in case of attack.

How to find your place in civil defense.

This course is designed to give that information, which along with an analysis of your qualifications should help each of you find your place in the program.

Training for Civil Defense

Self-protection.

The individual citizen is the basic unit in civil defense. The basic operation is individual self-protection. This consists of learning how to take certain protective measures, such as putting out small fires. This course teaches most of the individual self-protection measures.

When you work with your neighbors in protecting your home and community, you are carrying out the principle of extended self-protection. This same principle when applied to a community is called organized self-protection.

Mutual Aid and Mobile Support

Aid extends from one community to another.

Civil defense does not stop when we have developed self-protection and extended self-protection with our neighbors and organized our community. If our community should be attacked, we will need help from neighboring cities and communities. By this same token, our neighboring cities and communities will need our help in case they are attacked.

One form of this assistance is fixed support. This is provided by fixed installations, facilities, and personnel for emergency hospitalization, emergency housing and feeding of evacuees and homeless, emergency traffic control, and emergency bivouacking of mobile support forces.

By contributing "mutual aid" units or "mobile support" groups, a community can extend aid to neighboring communities. Mutual aid is the exchange of assistance, both mobile and fixed, between communities close to

each other in the same target area, and is generally given on the call of the communities themselves. Mobile support, on the other hand, is rendered by communities outside a single target area, and may be from outside the State; it is generally State-directed until it reaches the target area, when it comes under the direction of the local civil defense authorities. Where mobile support is to be furnished interstate, preattack written agreements are usually made between the States involved.

Go to the blackboard and write:

1. Individual self-protection.
2. Extended self-protection.
3. Organized self-protection.
4. Fixed support.
5. Mutual aid.
6. Mobile support.

Ask one or two questions to clarify these points before going ahead, such as:

1. How do individual self-protection and extended self-protection differ?
2. Mutual aid and mobile support are often mentioned together. How does mobile support differ from mutual aid?

Total Civil Defense

Self-defense at home and support for other communities.

For total civil defense we must be aware of the types of attack against which we will need defense. In an attack upon us any one or combination of the following weapons could be used: nuclear, high explosive, incendiary, chemical, and biological. Every community should prepare for civil defense to the fullest extent of its resources and capabilities on the principle of vulnerability to all weapons. Every community will then be better able not only to cope with any type of attack on its own territory, but will also be able to provide the greatest possible support to other communities.

Organization of Civil Defense

Instructor's objective: To explain the organization of civil defense.

Adapt this material to your local civil defense organization, check the information with your local civil defense office.

Civil Defense Act.

The Federal Civil Defense Administration was established by the 81st Congress in Public Law 920, known as the Federal Civil Defense Act of 1950.

What FCDA does.

FCDA's function is to prepare and coordinate civil defense plans and programs; provide basic civil defense research; give technical guidance and information to the States; develop and coordinate a program for educating and training the general public and volunteer workers; delegate, with the approval of the President, appropriate civil defense responsibilities to the various Federal departments and agencies; share with the States the cost of approved equipment; and stockpile certain emergency supplies.

FCDA also assists States in working out interstate compacts and operating procedures for mutual aid and mobile support. In addition, FCDA assists in the dissemination of attack warnings and the coordination of civil defense operations in the event of a nationwide emergency. The organization and operation of civil defense is primarily the responsibility of the States and their political subdivisions.

FCDA, through its headquarters and regional offices, provides guidance to the States. It also provides specialized assistance in the fields of

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engineering, fire, police, rescue, transportation, warden, industrial coordination, public education and training, health, emergency welfare, attack warning and communications, and supply.

Responsibility of the State

If facilities and time permit, use a civil defense organization chart of your State to point out the relationships and activities.

State provides leadership.

The State government provides leadership and supervision in planning for civil defense and directs supporting operations in an emergency.

The primary purpose of the State organization is to advise, guide, and coordinate local civil defense activities. During an emergency the State civil defense organization assumes active control over civil defense operations in its State. Should its facilities be inadequate, neighboring States, through prearranged plans, may be called on for assistance.

State may follow Federal plan.

Generally, the civil defense organizations are built around existing State, county, or municipal departments, with new civil defense functions added where necessary. Functions within the State organization may follow the Federal organization plan where applicable. Other functions peculiar to the needs of a State may be substituted or added. Although each governor is responsible for civil defense operations in his State, a civil defense director usually directs operations and coordinates his activities with those of other States, and with appropriate FCDA representatives.

Local Responsibility

Distribute copies of your local organization chart to the group.

The responsibility of the city or county is to:

1. Operate its civil defense system and make necessary mutual aid pacts and arrangements with neighboring communities.
2. Provide adequate staff and facilities for training.
3. Participate in the State program of organized mobile support.

The local civil defense organization coordinates and directs local activities and arranges mutual aid agreements with neighboring organizations.

Organize to fit local needs.

Within the local organization, divisions and functions may in general follow the plan as outlined under Federal and State organization. However, divisions and functions peculiar to the needs of a municipality may be substituted or added. Each mayor or chief executive is responsible for civil defense in his city. The city civil defense director is in charge of civil defense operations and coordinates them with other cities as well as with the county or State organization.

Our Local Civil Defense

Our local civil defense director, Mr. _____, and his staff organize and direct our civil defense program. In doing this, they must find and train many volunteer workers.

Throughout this course we should be thinking about the work we would like to do and which would best serve the needs of the community.

The Armed Forces Part in Civil Defense

Although civil defense is not the responsibility of the Armed Forces, their experts have worked with FCDA to determine which areas are most likely to be attacked, the kinds of attack to be expected, and what to do about them. They cooperate and maintain continuous liaison with civil defense.

The Armed Forces, since they are trained for the job, will dispose of unexploded ordnance such as bombs and artillery shells. Army teams to train civil defense workers in recognition and reporting of unexploded bombs are available through the FCDA regional offices.

The Air Force warns.

The Air Force operates the detection network and supervises the Ground Observer Corps composed of civilian volunteers recruited by civil defense. These two make up the aircraft detection system which warns of the approach of enemy planes. As we shall see when we discuss communications, the Air Force will warn civil defense officials when enemy planes are sighted.

Once the warning has been given to the civil defense authorities, however, it is their responsibility to transmit the warning to the public.

Operational Functions of Civil Defense

Instructor's Objective: To teach what civil defense workers do.

Having examined briefly the purposes and structure of the civil defense organization at Federal, State, and local level, let us consider some of the principal operational functions.

In case of an enemy attack, communications and transportation will be temporarily disrupted. It will be difficult to move fire-fighting and rescue equipment, medical aid, and supplies where they are needed. How can damage and loss of life be minimized and a community restored to as near normal condition as possible? The answer is found chiefly in the operational plans of the States and cities, a program of education for the public, and the training of a corps of volunteer workers.

Control Centers

Civil defense operations.

A control center is an operations headquarters for the direction and control of civil defense activities during an emergency. It is the communications nerve center for operations, where attack warnings, damage reports, and other civil defense information are received. It goes into action the moment the first attack warning is received and stays on the job until the emergency is over.

The number of control centers in a city will depend on the density of population and availability of communications facilities. However, every city will have one main control center which is the focal point for civil defense communications and command. It should be linked by wire and radio with the various civil defense and community services, with other control centers in the city and adjacent communities, and with the State control center.

Functions of control centers.

A control center has three main functions—to receive information, to issue instructions, and to maintain liaison with higher civil defense authorities. It must be staffed and equipped to:

1. Receive attack warnings from the proper authorities.
2. Relay attack warnings to civil defense authorities.
3. Transmit warning signals to the public.
4. Receive and evaluate damage reports.
5. Dispatch operating units to damaged areas.
6. Collect information, evaluate it, and disseminate its essential elements to civil defense services during an emergency.
7. Maintain communications with other civil defense authorities for reporting damage, receiving instructions, and requesting reinforcements when needed.

Attack warning. The main control center is the receiving point for attack warning information from the aircraft warning system and is responsible for passing the warnings on to the public by sirens, horns, or other warning devices.

If convenient, arrange a visit to the local control center.

Once the civil defense machinery has been set in motion by a warning from the control center, there are certain duties which we volunteers must prepare to do. Some of these duties are: communications, warden, police, fire, rescue, engineering, health, welfare, transportation, industrial protection, and supply.

Communications

Communications requirements. The communications system is the nerve network through which contact must be maintained within and between Federal, State, and local civil defense organizations.

A civil defense communications system requires facilities for:

1. Communications between civil defense control centers.
2. Attack warning networks.
3. Fire, police, transportation, rescue, warden, health, engineering, and reconnaissance communications.

Local communications will make use of telephone, telegraph, facsimile, radio, television, teletype, and messenger service.

The control center will be equipped with wire and radio communication for the use of key officials of the services and for the officer who must maintain liaison with key broadcasting stations. Operating positions within the control center will be provided for these officials.

Wire. Wire communications may include telephones and teletypewriter service to supplement verbal communications between the main control center and State center, and thence to FCDA regional and national headquarters.

Radio. Radio may be used to (1) insure continuity of communications if wire service should break down; and (2) communicate with warden command posts, mobile reconnaissance teams, mobile units of the radio amateur civil emergency service (RACES), and with the various peacetime organizations already equipped with radio. The latter include the fire and police departments, public utilities, taxicab companies, and sheriff's office.

Volunteers needed. Amateur radio operators can be valuable to civil defense in augmenting the services' communications facilities. Persons with technical training in radio, television, telegraph, or telephone work are needed. Women volunteers especially can be useful in answering phones and in operating message centers.

Radio Broadcasting

CONELRAD. Communications are needed not only for conducting civil defense operations, but also for informing the public of what is happening during an emergency and for issuing necessary instructions. The broadcasting industry and the Federal government, working together, have devised a special system of AM (standard) radio broadcasting to do this. The system is called "Plan for CONtrol of ELectromagnetic RADiation"—CONELRAD for short.

In a civil defense emergency, television and FM (frequency modulation) radio will go off the air, because enemy bombers could home on the station. Only AM (standard) radio programs at 640 or 1240 on the radio dial will keep the public informed throughout the emergency. By alternate or intermittent

use of the frequency and at reduced power, no one station can serve as a radio beacon for enemy bombers.

In accordance with the CONELRAD plan, a continuous program of civil defense instruction and reports will be on the air at either or both of these frequencies.

In a few parts of the country, the radio may be silent, because of technical limitations and reduced transmitting power.

If the power supply is cut off, a battery-operated portable radio is the only means of obtaining information via CONELRAD.

Upon WARNING YELLOW (enemy attack probable), CONELRAD will go into operation. Designated AM (standard) radio stations will switch, in a matter of minutes, to the emergency broadcasting system on 1 of the 2 officially designated CD frequencies—640 or 1240 kilocycles (marked as 64 or 124 on most radio dials). Normal broadcasting will resume on the WARNING WHITE (all clear). The warning signals will be discussed in greater detail in Session II.

The Conelrad leaflet explaining this system of broadcasting is for sale by the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C. $2.25 per 100 copies. It may be reproduced and distributed free or for sale. Obtain copies of this leaflet from your State Civil Defense Office and distribute them to the group.

Wardens

Link between operations and the public.

The warden service works directly with persons, families, and neighborhood and employee groups. It is the connecting link between organized civil defense operations and the public. Wardens train people in self-protection, disseminate civil defense information, make rosters of neighborhood residents, and inventory buildings and equipment within their posts. Assistant neighborhood or block wardens train families in individual self-protection, and organize neighborhood self-protection teams such as neighborhood fire fighting, rescue, first-aid, communications, and welfare. When a WARNING YELLOW is received by civil defense authorities in a locality which has not yet adopted an evacuation plan, the chief neighborhood wardens and staff report to neighborhood post headquarters and await further instructions. If the locality has an evacuation plan, the wardens assume their duties according to the plan. When a WARNING RED is received by civil defense authorities, the appropriate signal is immediately sounded on the public devices and wardens will direct people to safe areas, and then take cover themselves. Following an attack, wardens:

Warden emergency duties.

1. Report casualties and general conditions.
2. Give first aid; fight small fires; assist in rescue work, welfare, evacuation, crowd control, and panic prevention.
3. Report to the next highest authority when the situation in the area is beyond the control of the self-protection forces of the immediate area.
4. Assist in unexploded ordnance reconnaissance.
5. Assist organized civil defense teams in evacuation, police, fire, communications, and other services.
6. Assist emergency welfare services in providing reception care.

CD backbone.

The wardens and their assistants form the backbone of civil defense. They must, therefore, be well-known, respected, and accepted as leaders by their neighbors and fellow workers. Generally, each chief neighborhood

warden is responsible for an area where about 500 people live or work and has several assistant neighborhood wardens to help him.

Wardens will need comprehensive training. Setting up a neighborhood warden organization is a basic step in organizing civil defense. Men and women able and willing to assume responsibility are needed as wardens. Housewives, since they know their neighborhoods better and are home for longer periods than men, are especially useful as wardens.

Police

Emergency problems.

In an emergency more police will be needed. Existing police services will not be numerous enough to cope with conditions caused by large-scale disasters or enemy attacks.

Police will be particularly needed to control traffic. This will require extensive planning and manpower.

Auxiliary police.

The auxiliary police will operate under the supervision and direction of the regular police forces. Subject to the policy and procedures of local police authorities, auxiliaries will:

1. Assist the regular police in handling traffic.
2. Insure emergency equipment and personnel priority to move where needed.
3. Maintain or restore order.
4. Serve in antilooting patrols.
5. Guard critical installations where normal security measures have been reduced because of damage, or where additional security measures are needed.
6. Guard supplies and equipment.
7. Assist other civil defense services.
8. Give first aid when necessary.
9. Assist regular police in explosive ordnance reconnaissance and establishment of safety measures.
10. Assist in maintaining police communications.
11. Assist in evacuation.
12. Assist regular police in special capacities such as photographer, fingerprint technician, and communications technician.
13. Undertake routine duties (for instance, as jailer, booking officer, wagon guard, or driver).
14. Take temporary charge of persons unable to care for themselves (For example: elderly people, children.)
15. Assist in panic prevention and control.
16. Assist in guarding prisoners to be evacuated.
17. Assist in other police work where necessary.

Fire Fighting

The first line of defense in fire fighting is in the home and on the job. Every industrial worker, householder, and housewife should be trained to fight small fires. Hundreds of small fires can start simultaneously following attacks with nuclear weapons.

Need for firemen.

The second line of defense in fire fighting is the local fire department. Under attack conditions, fires will become so great that regular firemen will need considerable help. Auxiliary firemen will be needed to work with the local fire department. The number of auxiliaries required may be several times that of the professional fire fighters.

Rescue

No organization exists which can do rescue work on the scale required following a nuclear attack. The civil defense rescue service has been established to provide an adequate number of trained and equipped rescue workers.

Rescuing trapped persons.

Rescue workers will remove trapped persons, many of whom may be injured. In a large-scale emergency, organized rescue teams may not be immediately available. Everyone should learn basic rescue work so he can help himself and others in such an emergency.

Rescue teams.

Rescue work must be done by skilled rescue workers. Untrained rescue workers can assist, but they must be supervised by experienced men. Without supervision they could cause additional collapse of damaged structures and injure themselves and others. Rescue work requires some basic engineering skills, such as shoring, rigging, and construction, and proper training, practical experience, and good judgment.

Engineering

Engineering functions.

The primary job of the engineers is to return the facilities and streets of a stricken city to an operating condition as soon as possible.

This will require: repair of damaged water, sewer, gas, and electrical power systems; clearance of debris; construction of temporary hospitals and housing for evacuees; and many other activities.

Engineering volunteers must be experienced.

Civil defense engineering workers should be experienced in the building trades, utilities, or the construction industry. Men who know how to operate special equipment such as cranes, bulldozers, dump trucks, and welding equipment are needed. In addition, there must be a labor force to help clear away wreckage and reopen the streets.

Local civil defense organizations may use existing engineering groups in their present form without reassigning them. For example, men now employed by public works departments, utility departments, and contracting firms would do work in their normal field following an enemy attack. They may work under their regular supervisors, but at the direction of civil defense officials. Equipment and material dealers, labor unions, engineering schools, and other groups that have skilled workmen, tools, and material are sources for this kind of assistance.

Health and Medical Services and Casualty Care

Personnel in this category render necessary civilian health and medical services in a civil defense emergency. They detect the presence and minimize the effect of atomic, radiological, chemical, and biological agents. Some of their more important functions are:

1. *Operating a first-aid system.*—A complete system of first-aid stations will be set up in areas designated by State and local civil defense authorities. Emergency equipment and supplies will be stored at fringe areas ready for prompt transportation to the stations. (If suitable buildings are not available, vans may serve as first-aid stations.)

   Physicians, dentists, nurses, osteopaths, pharmacists, veterinarians, first-aid workers, litter bearers, nurse's aides, orderlies, and clerks will be assigned to these stations. Emergency life-saving measures and screening of casualties for further treatment will be

done at these stations. A dispatching service will be needed to route casualties to advanced treatment centers.

First-aid stations and emergency hospital

2. *Operating emergency hospitals.*—Improvised or emergency hospitals may be established on the outskirts of target cities. Space available for conversion to hospitals may be determined by an inventory of facilities. Emergency equipment will be readied for shipment from storage points. Staffs for improvised hospitals will be drawn from nearby areas.

   Patients who can be transported will be sent to hospitals in neighboring communities. Since trucks and buses may be used as emergency ambulances, close cooperation with the transportation services is necessary.

   Casualty care in hospitals is provided primarily by surgical teams, shock-treatment units, and burn-treatment units. These should be organized locally. Supplemented by teams and units from other cities, they will form affiliated hospital units.

3. *Stockpiling medical supplies.*—To augment existing medical supplies, the Federal Government is stockpiling them as money is made available by Congress. Stockpiles are located outside target areas and readily available for shipment to target areas.

Emergency sanitation measures

4. *Sanitation.*—The preservation of the health of the surviving population after a disaster requires:

   (*a*) Regulation or restoration of water sanitation, plus safe treatment of emergency water supplies.

   (*b*) Safe handling of food, especially in emergency kitchens and canteens.

   (*c*) Emergency methods for sanitary protection and distribution of the milk supply. This will necessitate modification or revision of local milk sanitation regulations, particularly in areas where the pasteurization plants have been disabled.

   (*d*) Emergency sanitation measures for disposal of human wastes to lessen epidemic hazards.

   (*e*) Emergency methods for handling garbage and refuse, including insect and rodent control.

   (*f*) Regulation of sanitation in shelters and temporary housing.

   (*g*) Decontamination measures made necessary by radiological, biological, or chemical warfare.

5. *Providing morgue facilities.*—Temporary morgues where the dead may be identified prior to burial will be established. The engineering services will prepare the graves and complete interment.

Many volunteer workers will be nedeed for the health services, such as:

1. Professionals in the fields of medicine, nursing, hospital care, and health.
2. Laboratory technicians and persons with similar experience or training.
3. First-aid workers, nurse's aides, and persons trained in home nursing.
4. Hospital orderlies, ambulance personnel, litter (stretcher) bearers, supply handlers, maintenance workers.
5. Science teachers and students, radio and TV repairmen, for radiological monitoring.

Emergency Welfare

The functions of the emergency welfare services are:

1. *Mass care.*—For people who are hungry, homeless, and in need of clothing.
2. *Family rehabilitation services.*—Individualized help to persons and families, in the form of: financial assistance for the reestablishment of family living; temporary rehousing; protective services for children, handicapped, aged and others, including those in institutions; legal, insurance, employment, religious and personal counsel; and the referral of long-term problems to appropriate organizations. **Aid to families**
3. *Registration and information.*—Registering the dead, hospitalized, and those not living at their preattack address. Reuniting separated families. Answering inquiries regarding the whereabouts and well-being of persons. Supplying "Safety Notification" cards. Disseminating authorized information about neighborhood conditions to speed the return of people to self-care.

Persons trained in such fields as social work, feeding, housing, management, and the manufacture and distribution of clothing are needed. Experienced persons should serve as leaders, directing, supervising, and training the other volunteers.

Transportation

The transportation services provide facilities to the various civil defense services for the emergency movement of personnel, material, and equipment. All existing commercial transportation facilities and personnel in the community will be needed to carry out this function. Local planning and surveys may reveal the need for additional personnel and vehicles. Such personnel will be trained and assigned duties.

The transportation services must coordinate their operations with those of the engineering and police services.

Industrial Protection

The industrial protection program is designed to relate the resources of industry to national civil defense operations. Industry covers all activity having to do with the production and distribution of goods and commodities. **Facilities self-protection and local civil defense.**

This program includes facility self-protection organization, the integration of this organization into the community civil defense organization, and the emergency restoration of industrial facilities after attack.

The facility self-protection organization is the means by which steps are taken in a facility to safeguard its occupants and property from the effects of an enemy attack. In this program a facility is considered to be any establishment or building having sufficient personnel to organize for its self-protection. Industrial plants, hotels, department stores, schools, and other institutions are considered facilities.

Each organized facility has a civil defense director or coordinator. Plans are developed and explained to the employees at the start and their active support requested. It has been recommended that a joint management-employee committee for civil defense be organized.

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Specific measures taken by facilities in organizing for self-protection are:

1. *Attack warning.*—A system is set up for alerting the employees as soon as the warning is received from the local civil defense office.
2. *Shelter.*—Plans are made for the protection of both personnel and equipment. Where preattack evacuation is not a part of the local civil defense plan, personnel move into shelter areas upon WARNING RED.
3. *Protection of business records.*—Such measures protect assets, sustain the equity of stockholders or depositors, and assure continued operation of the facility.
4. *Emergency operations.*—The emergency operations unit integrates existing protective services and such civil defense services as are needed into the overall plan. A facility control room is set up. Personnel of the civil defense services within the facility do not have emergency responsibilities in the local community civil defense organization that would conflict with their facility assignments. However, facility employees can participate in local activities during off-duty hours.
5. *Facility mutual assistance.*—In many industrial areas a number of industrial plants in close proximity to each other, pool their protection resources for mutual assistance. Where such organization exists, local civil defense equipment is freed for use in other areas.
6. *Industrial security.*—Industrial security in so far as it pertains to physical protective measures, such as guard systems, flood lighting, and fencing, is part of industrial civil defense.

The facilities self-protection organization is developed in cooperation with the local civil defense organization. In many places, an industry defense council composed of local business and industrial leaders assists in coordinating activities of the two organizations.

The local civil defense director has on his staff an industrial coordinator. He is responsible for development of the local industrial defense program. This program includes emergency plans at individual plants, mutual assistance plans between and among neighboring facilities, and integration of such plans into the emergency plans of the community. During emergency operations, he assists the local civil defense director by coordinating the emergency use of available emergency squads based at facilities.

Emergency restoration.

The industrial protection program includes plans for restoration of vital production following an enemy attack. These plans cover such subjects as precise damage assessment, and allocation of personnel, raw materials, and critical equipment.

Supply

The civil defense supply system has five major functions:

1. *Determining requirements.*—After available resources have been determined locally and items in short supply identified, overall requirements are reported to the State for:

   (*a*) Checking requirements for critical materials with national production and defense needs.

(*b*) Assigning procurement priorities on the basis of target area needs.

2. *Procurement.*—Before an emergency, civil defense materials are procured as follows:

(*a*) By States or communities using local funds for State and local supplies.

(*b*) By FCDA or States with funds contributed equally by the Federal Government and the States.

(*c*) With Federal funds for Federal reserve stock.

Generally, personal equipment, administrative equipment and supplies, and operational items to fill special needs are procured with local funds. Certain other equipment defined as organizational equipment may be obtained through the State with funds matched equally by the Federal Government. Organizational equipment is that:

Organizational equipment.

(*a*) Necessary to civil defense organization, as distinguished from personal equipment, and

(*b*) Financed in whole or in part by the Federal Government. (Detailed instructions for matching funds for organizational equipment are issued to the States by FCDA from time to time.)

3. *Storage.*—Separate storage facilities under independent control of the communities, States, and FCDA are required. Warehouses are so located as to assure immediate availability of supplies in time of emergency. Small quantities of supplies stored within a target area at several points which are considered least vulnerable further assure this availability. Larger quantities can be located throughout fringe areas as a secondary source. Larger State-operated warehouses are located near the target areas. The State is responsible for warehousing and storing equipment purchased with matched funds.

In actual operation Federal stockpiles will be made available as local and State supplies become depleted. To this end, the Federal Government has warehouses in strategic locations for storage of FCDA-procured materials, near enough to target areas to insure the movement of needed material to a striken area in a few hours.

4. *Distribution.*—Transportation personnel move and have custody of material in transit. Local, State, and Federal supply officials are responsible for loading material. Unloading is a responsibility of officials receiving the supplies.

5. *Accounting.*—Since civil defense equipment is obtained by public funds, accurate records of procurement, storage, and distribution must be kept by responsible officials.

Shelter

Shelter is largely a technical problem requiring the services of architects, engineers, and others having knowledge of building construction.

Trained personnel are required to make shelter surveys to determine the number of people for whom shelter must be provided. They also are needed to select suitable shelter areas within existing buildings. Builders, construction men, fire marshals, building inspectors, and others familiar with building construction are qualified for this work.

Civil Defense as a Natural Disaster Agency

Red Cross a quasi-official organization.

In 1905 Congress chartered the American National Red Cross as a quasi-official organization, to provide disaster victims with food, clothing, medical care, shelter, and rehabilitation.

In addition, Congress from time to time has given limited authority to various Federal agencies to function in certain phases of relief—principally restoration of essential Government services.

When the Surplus Property Disaster Act of 1947 became ineffective, Congress enacted the Federal Disaster Act of 1950.

A division of functions which had been developing between local Red Cross chapters and Federal agencies having special responsibilities in disaster, was written into the act. Section 4 reads: "Nothing contained in this act shall be construed to limit or in any way affect the responsibilities of the American National Red Cross under the (charter) act approved January 5, 1905, as amended."

The responsibility for Federal relief under this act was given temporarily to the Housing and Home Finance Agency until January 1953, when the FCDA took it over.

As of June 1954, 40 States, the District of Columbia, and 5 of our Territories and possessions had made their civil defense directors responsible for control of emergencies arising from natural disaster as well as those caused by enemy attack. The remaining States had similar legislation under consideration.

Civil defense natural disaster action can involve all levels of civil defense, from local to Federal, depending on the extent of the disaster and the ability of communities or States to cope with it.

Local

The nucleus of local community services needed in an emergency is the local civil defense force. Auxiliary civil defense firemen, rescue crews, and policemen, trained in civil defense against the weapons of modern war are equally prepared to deal with natural disaster.

Auxiliaries are trained by the regular services, and usually the officers of the regular services are officers of the auxiliaries.

Where there is a civil defense force in readiness, emergency operations can be expanded rapidly and efficiently without the handicap of willing but untrained volunteers who often get in each other's way and instead of helping may actually hinder operations.

If local resources are insufficient to meet the need, outside assistance is invoked.

State

The request for outside assistance is made by the mayor of a stricken city to the governor of his State. Heretofore the governor's resources were, in many cases, limited to the National Guard, the State militia, the State police, and small detachments of the regular governmental services of the State, assisted by the Red Cross. Now his capacity to render disaster assistance is multiplied many times by the civil defense forces of the State, provided the State has granted authority to the civil defense organization to handle natural disaster operations. Moreover, the governor has direct command of mobile support groups organized specifically to supplement local civil defense forces.

In the event a governor cannot mobilize sufficient forces within his own State, to cope with an emergency he can call on the regional office of FCDA for help from neighboring States and the Federal Government, or he can go directly to neighboring States with whom his State has mutual aid compacts.

Regional

FCDA regional offices coordinate the immediate actions of Federal agencies which have standing authorization to intervene in natural disasters without waiting for the President to declare a condition of a "major disaster." Regional offices also keep FCDA headquarters informed of the nature of a disaster and its development.

FCDA Headquarters

The Federal Disaster Act goes into effect only after the governor of a stricken State applies to the President for aid and certifies that the State cannot cope with the situation, and when the President declares it a "major disaster." Of 400 to 500 disasters per year in the United States, about 20 are declared "major."

FCDA disaster action.

The President's determination is guided by a formal recommendation which he requests from the Federal Civil Defense Administrator. In turn the FCDA is guided by recommendations of its regional offices and appropriate Federal agencies concerning the relief and funds required. Federal relief supplements, not supplants, State and local measures.

The Disaster Act limits Federal action to emergency protection of life and property. Permanent restoration is left for special legislative action after the disaster has been brought under emergency control.

Declaration by the President of a "major disaster" makes available the resources of all Federal agencies for disaster relief. These resources include material, equipment, and the services of professional and skilled personnel.

All appropriate Federal agencies have named liaison officers to FCDA. When any agency is called on by FCDA to furnish disaster assistance, it supervises its own effort. It is reimbursed from Federal Disaster funds for disaster action beyond its statutory duties that FCDA may order.

FCDA has agreements with the principal governmental agencies, covering their disaster responsibilities, procedures for bringing them into action.

The Nation has had considerable experience in dealing with natural disasters. Each natural disaster is a relatively small skirmish compared to the effects of a nuclear bombing. It is through such skirmishes, however, that we move toward effective civil defense.

Personal Data

If data on each member in your group has not already been furnished you by the local civil defense office, have the group fill out personal data sheets. These will serve to:

1. Help you fit your instruction to the group.
2. Aid you in advising the volunteer on his choice of service if he has not already made a choice.
3. Advise the head of the service selected by the volunteer.
4. Inform you of the volunteer's obligations and the time he can give to civil defense.
5. Acquaint you with the volunteer's education and skills useful in civil defense.

After completing the course, personal data should be sent to:

1. The volunteers' next instructor.
2. The local civil defense office.

Distribute an information sheet for collecting the personal data you will need.

Collecting personal data.

In closing, I am asking each of you to supply personal data for our use throughout the course, for your benefit as well as that of the service advisor and myself. We would like to have all the information you can give us, even though you may wish to omit some. Mrs. ----------, Miss ----------, Mr. ----------, and I will assist you and answer any questions you may have.

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[1] A 25-percent discount is allowed by the Government Printing Office for orders of over 100 on all publications excepting leaflets. On leaflets the discount is allowed for orders of over 1,000.

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143—U. S. Coast Guard.

144—Use of Surplus Federal Property in Natural Disasters.

147—Department of Commerce, Bureau of Public Roads.

151—General Services Administration.

154—Types of Federal Assistance.

155—Housing and Home Finance Agency.

157—Federal-State Agreements for the Administration and Accounting of Disaster Assistance.

171—FCDA Planning Assumptions for Fiscal Year 1955.

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DEFENSE AGAINST ATOMIC ATTACK

Instructor's objective: To develop an understanding of nuclear warfare and how we can protect ourselves against a nuclear attack.

Summary of Effects of Nuclear Explosion

"Atomic attack" refers to attack by any of the nuclear weapons, specifically the atomic bomb and the hydrogen bomb.

Nuclear bombs might be exploded high in the air (air burst), at the earth's surface (surface burst), or under the surface (subsurface burst—underground or under water).

Air burst.

With the air burst, the blast damage is the most widespread. Immediate (initial) radiation will be a definite personal hazard for 1 or 2 minutes. Many people will be severely burned by the heat from the bomb unless they are protected. The greatest number of injuries and damage when the bomb bursts will result from blast effects.

Surface burst.

In a surface burst, the extent of damage and number of casualties from blast and fire effects would be less than with an air burst, but the radiation hazard would be increased because of fallout.

Underground and underwater burst.

With the underground or underwater burst, the area of intensive damage will be smaller but the "fallout" of radioactive dust or moisture would be further increased. In an underwater burst, blast damage would be less than in an air, surface, or underground burst.

Recent tests have shown that the danger from radiological contamination is considerably increased with the larger nuclear weapons. Whether the burst is high in the air, at the earth's surface, underground, or under water, "fallout" (clouds of radioactive dust or moisture) will extend for many miles. When this fallout settles on the earth's surface it can be fatal to unprotected persons.

Fallout.

The fallout consists of dust and tiny particles made radioactive by the explosion and unfissioned materials from the bomb. This "induced" radiation hazard in the fallout is especially dangerous since it cannot be seen, tasted, or felt, and the effects do not show up until hours or days after exposure.

General Description of Explosion

Flash of light.

When a nuclear weapon explodes in the air, a huge ball of fire results. From this a dazzling flash of light, intense heat, and nuclear radiation shoots out in all directions, followed by blast and sound waves. The light, heat, and nuclear radiation effects arrive at the target area on the ground almost instantaneously, and the slower moving blast and sound waves some seconds later. The radioactive byproducts, formed by the explosion of the bomb, arrive still later in the "fallout."

The ball of fire, quickly losing brilliance, rises into the air. The hot gases rise in a column, first multicolored, then white. This column rises to a height of many thousands of feet and then billows out. On the surface below, the scene is obscured by a cloud of dust and smoke.

Effects of the Bomb

The extent of damage caused by an air burst varies with the size and type of bomb, distance from ground zero (point on the ground directly under the burst) type of building construction, terrain, and the climatic conditions at the time of the burst.

Blast.

In the area surrounding ground zero people would be killed by any one or all of the effects of the bomb. The farther away from ground zero, the less dangerous are the effects. The closer to ground zero, the better the shelter must be to provide adequate protection. The greatest number of injuries and deaths from a nuclear explosion is likely to be caused by collapse of buildings due to blast, with the survivors possibly being trapped and exposed to fire. Many injuries will be caused by falling masonry, broken glass, and flying debris.

Heat and fire.

The farther from ground zero, the less are the possibilities of receiving fatal burns. The effects of heat flash on unprotected people are severe. Secondary fires—fires caused by electrical and heating facilities damaged by the blast—would be extensive.

Initial radiation.

The immediate radiation danger is from initial radiation—rays and particles which travel at the speed of light and are given off in all directions from the bomb at the time of the explosion. Most of these are emitted in the first few seconds; after 1 minute there is little danger from them. The farther from ground zero, the less is the intensity of initial radiation.

Induced radiation.

An important radiation danger is from the byproducts of the bomb and from the materials made radioactive by the neutrons released at the time of burst. These would be in the huge cloud formed high in the air and might drift for many miles over an appreciable period of time before settling to earth. Weather conditions would have an effect on this cloud, possibly causing it to settle to earth near the target area or carrying it many miles away and thinning it out before it settles. However, even though thinned out, it is still hazardous when it settles.

Underwater burst.

In underwater explosions radioactive materials will be present in the water and mist thrown up, and can cause contamination over a wide area. Because many different elements may be involved in causing radioactive contamination, and because the intensity of the danger will also vary according to height of explosion, meteorological conditions, and the nature and composition of the ground, it is not possible to say in advance how long an area thus contaminated will remain dangerous.

If you have time you might at this point show the motion picture "Operation Ivy" (running time, 28 minutes). You can obtain it through your State or regional office.

Any illustration of the effects of a nuclear explosion would have to take into consideration the power of the bomb. The bombs used at Hiroshima and Nagasaki are known as 1(X) bombs, equal to 20,000 tons of TNT. A bomb twice as powerful is designated a 2(X), etc. The radius of damage, however, would not increase in direct proportion to the size of the bomb: for example, a 25(X) bomb causes a radius of destruction not 25 times as great as a 1(X), but about three times as great.

Rather than describe the destruction from any one specific size bomb, let's establish concentric zones of blast damage that can be adapted to any size bomb. The zones might be called zone A, nearly complete destruction; zone B, severe damage; zone C, moderate damage; and zone D, partial damage.

This table shows the radii from ground zero of the zones for different size bombs.

Zone	2½(X)	8(X)	25(X)	50(X)
A	0.0–0.7 mi	0.0–1.0 mi	0.0–1.5 mi	0.0–1.8 mi.
B	0.7–1.4 mi	1.0–2.0 mi	1.5–2.9 mi	1.8–3.7 mi.
C	1.4–2.0 mi	2.0–3.0 mi	2.9–4.4 mi	3.7–5.5 mi.
D	2.0–2.7 mi	3.0–4.0 mi	4.4–5.8 mi	5.5–7.4 mi.

Although this table lists only bombs through 50(X) in power (equal to one million tons of TNT—one megaton), we know that devices several megatons in power have already been exploded experimentally. This does not mean that our present planning is outmoded, but our preparation must be extended and intensified in anticipation of wider areas of destruction.

With sheets of transparent material you might make four overlays of concentric circles showing the zones of blast damage for four different size bombs. Place the overlays over a map of your city, centered on the most likely target in your area. Be sure the overlays are to the same scale as the map.

These figures are not absolute, as the conditions under which a bomb is dropped might give some variation in the degree and types of damage. However, this table should give you a general idea of the power of the bomb.

Physical Defense Against Atomic Weapons

Dispersal of Facilities

The best defense against attack would be dispersal of population and facilities. A national policy for industrial dispersion was announced in August 1951 to assure greater protection of the Nation's industrial production from A-bomb attack.

This policy provides that new defense-supporting production facilities be located 10 or more miles from highly industrialized or densely populated sections or major military installations.

The Federal Government assists new facilities to meet the requirements of this policy, by issuing them certificates of necessity (accelerated tax amortization privilege) and defense loans. The Office of Defense Mobilization administers this program.

Where plants are already situated in target areas or where dispersion of new plants is impractical, the Office of Defense Mobilization allows up to 100 percent accelerated tax amortization over a 5-year period on money spent for protective construction (above the ordinary cost of construction). To be eligible, an industrial plant must meet standards established by FCDA.

In addition to special construction for the protection of a plant's occupants, equipment, and contents, bomb shelters are eligible for Federal assistance.

However, protective construction is not a substitute for dispersion.

Types of protective construction.

Personnel and equipment in plants in target areas may be given an effective degree of protection against blast and fire by strengthening the walls and roofs, improving the fireproofing, and similar measures. Fuel storage tanks, containers of chemicals and gases, steam plants, and electric power supply equipment need special consideration.

Evacuation of Persons

Before giving this session, find out from your local civil defense authorities the status of local evacuation plans and give that information to your class here.

Another form of dispersal which should do much to reduce the number of casualties from enemy air attack is the preattack tactical evacuation of persons from target areas.

Tactical dispersal requires sufficient warning time.

Plans should be prepared to carry out evacuation of people by foot and by private and public transportation if sufficient warning time is given. Air-attack warning time at present will probably be, at a minimum, one hour in coastal or border areas, and two hours or more in the interior of the country.

All the civil defense services will be involved in such evacuation. Provision of transportation, traffic control, feeding and other welfare problems, attention to special groups such as the aged, the handicapped, and children, and provision of shelter for those who are not evacuated are some of the details that local civil defense organizations must consider in planning.

Until a workable evacuation plan in your city has been adopted and rehearsed, the current plan of going to the nearest shelter when public warning is given should be followed.

Postattack movement of people from damaged areas.

After an enemy air attack, some areas will have to be emptied of people because of the extent of damage or because the areas have been made hazardous by the attack. This postattack movement of people again will involve many of the civil defense services, especially the police and warden services. Many of the details will be the same as those for preattack tactical dispersal.

Psychological Defense Against Atomic Weapons

Ask your group: "How many of you have been in disaster or crisis situations where many persons exhibited panic behavior?"

If there are no replies to this question, try this approach: "Do you remember the newspaper accounts of the behavior of people in the Hindu pilgrim stampede of 1954?"

Panic.

A possible grave danger from atomic attack is panic. The effects of panic on large groups of persons have been illustrated by a number of events such as the Hindu pilgrim stampede in India in 1954 involving 3,000,000 persons; the Texas City Disaster of 1947, the "Men From Mars" radio broadcast in 1938, and other such occurrences.

Panic is irrational behavior due to uncontrolled fear. Fear in itself is not panic; it's a natural, even healthy reaction. When channeled along the right lines, i. e., motivated to constructive action, fear can be an asset.

Informing the people.

Effective civil defense action depends upon the prevention of panic, rather than suppression after it has begun. Three basic steps must be taken now to prevent panic in civil defense emergencies. They are:

1. Informing the public beforehand of what is possible and what to do about it.
2. Training civil defense leaders, down to the family level, to prevent panic where it starts.
3. Establishing emergency information facilities to give the people a quick, full account of what is happening—before, during, and after attack.

To carry out the first step, a widespread program of public education, using all of the media of communications, is being undertaken by FCDA, as well as State and local organizations.

Newspaper and magazine articles, booklets and pamphlets, public appearances by civil defense officials, and radio and television shows, national and local, are getting the information to the people. Telecasting to the Nation of a test atomic explosion in the spring of 1953 and release in 1954 of the film "Operation Ivy" are outstanding examples of how people are being given the information they should have.

Training leaders in civil defense.

The second step—training civil defense leaders—is being carried on through the Federal civil defense schools and through local courses of instruction such as this. More than 200,000 persons have been trained in State and city civil defense schools by instructors who received their training at the Federal schools.

Civil defense leadership is being tested regularly in exercises varying in magnitude from block warden operations to those covering entire regions. In 1953 about 2,000 tests were held involving 2,000,000 civil defense workers. In June of 1954, a national test exercise, operation "alert" was held.

Emergency information facilities.

Emergency information facilities—the third step—are being developed rapidly on national, State, and local levels. CONELRAD—which we discussed in our first session—will provide official civil defense information to the public when the first warning of impending attack is given and will continue to give information until after danger of further attack is over. Many local organizations are preparing plans for dissemination of emergency information through newspapers and radio. Such plans include publishing newspaper editions outside a target area if the local newspaper facilities are destroyed. In the Niagara Falls area such arrangements are on an international basis.

Everyone trained.

Each person must make his own preparations for defense and survival. Every person must have some specific job to do in relation to other persons in his neighborhood or community. Last and most important, everyone must be trained in the things he is to do in time of disaster so he will automatically perform those tasks regardless of whatever obstacles may confront him in the emergency.

People should be educated in atomic warfare defense.

Everyone should know the facts about the probable destruction wrought by atomic attack, the number of casualties to be expected, and the protective measures to be taken. They should know whom to look to for leadership—whether to the block warden, the apartment house warden, or—if they belong to a team—the team leader. Some knowledge of what to expect will come to the people through the newspapers, radio, and television—but the major responsibility for this training should be assumed by the local civil defense office.

Leadership

Leadership is needed in an emergency.

There must be authoritative leadership—persons who will come forward with direct orders and who have the authority to see that their orders are carried out. Leaders must understand panic behavior. They must know the people with whom they work.

Civil defense volunteers are trained to carry out specific jobs. They are drilled to perform their jobs under all types of conditions. They know their leaders and are trained to carry out the instructions of those leaders. You, as volunteers, have the responsibility for assuming leadership when the occasion arises. In a disaster situation you should be able to take the lead and direct people in the work to be done until the designated leader arrives.

At this point you may wish to review and have a brief discussion of the material covered in the session so far.

Personal Defense

At this part of the session we are going to discuss personal defense in terms of self-protection, family protection, and neighborhood protection against nuclear weapons. Defense against other types of weapons will be discussed in a later session.

Russia explodes atomic device.

On September 23, 1949, the President of the United States announced that an atomic device had been exploded in Russia. On August 20, 1953, the Atomic Energy Commission confirmed the explosion of a thermonuclear (hydrogen) device by the Russians. From these dates you and I were faced with the question: Can we survive a nuclear attack?

As a matter of fact, we can survive—most of us—just as most of us expect to escape traffic hazards, heart disease, cancer, and death by drowning.

Self-Protection

We must face reality.

Let us examine the necessary precautions and defenses against nuclear attack which we must learn to increase our chances of survival:

1. Know the bomb's true dangers.
2. Know the steps you can take to escape them.

In 1953, 38,300 people were killed and 1,350,000 injured in traffic accidents. However, we still cross streets and drive cars. Similarly, we must go on living and working—nuclear bomb or no nuclear bomb. But we do need information and training in civil defense.

Evacuation of people from target areas when there is sufficient warning of impending attack is one of the best civil defense measures that can be taken. By learning what to do when evacuation is called for and giving their complete cooperation in local evacuation drills, citizens can help make evacuation planning successful. We have already discussed this subject earlier in this session.

Need for shelter protection.

Where there is insufficient time for evacuation, shelter is the only remaining means of protecting people against nuclear attack.

The problem of providing shelter protection against nuclear weapons is more complicated than for high explosives. In addition to blast it is necessary to take into account heat and radiation. Shelters must be readily accessible and offer quick means of entrance and exit under attack conditions.

Shelters according to calculated risk.

One hundred and ninety-three areas in the United States and Territories have been selected as target areas upon which attack is most likely. Within these areas, it is impossible to forecast accurately zones of damage from an enemy attack, because of the many variable factors such as bombing error, size of bomb, number of bombs, and layout of cities. Thus shelter should be provided over an entire target area, even if a policy of tactical dispersal is adopted.

Even if you have only a second's warning, there is one important thing you can do to lessen your chances of injury by blast: Fall flat on your stomach.

Seek cover.

More than half of all wounds from blast effects are the result of persons being tossed about bodily or being struck by falling and flying objects. If you lie down flat, you are less likely to be thrown about. If you have time to pick a good spot, there is less chance of your being struck by flying glass and other missiles.

If you are inside a large office building when the warning sounds, look for a designated shelter area. If one is not available, get as low in the building and as near to the center as possible. In private homes and similar buildings, the cellar is usually the best place. Avoid exposure to hazards from utilities.

If you are in a building with no cellar, lie down along an inside wall, or duck under a bed or table. Follow instructions of building wardens if there is an emergency plan in effect.

Guard your eyes.

If you are outdoors and have to fall flat to protect yourself from a bombing, don't look up to see what is coming. Even during the daylight hours, the flash from a bursting nuclear weapon can cause several moments of blindness. Bury your face in your arms and keep it there for 10 to 12 seconds after the explosion. That will also help to protect your face from flying glass and other objects.

If possible, demonstrate what you mean—show them how to cover.

Flash burns cause casualties.

Any shelter that provides protection from the explosive effects of an atomic bomb will protect against heat flash. A little bit of solid material will provide flash protection even close to the explosion. Farther out, the thinnest sort of material—even cotton cloth—will give reasonable protection.

Practice at home.

If you are at home when warning of imminent enemy attack is given, go to your home shelter or shelter area. Stay there until you hear the all-clear signal. It may be a half hour or more. Start right now to have family air-raid drills. Talk over the facts with all members of the family to be sure each understands. Children old enough to understand can be taught to do the right things. Younger children will have to depend on their parents.

If children in your family are in school at time of attack, do not try to reach them. You endanger yourself and them. The school will take care of them.

If you are in another part of the neighborhood or city, do not try to get home. There may not be time, and you will only cause confusion on the streets.

Warning Signals

Because of the increased emphasis on evacuation as the best solution to the problem of survival from nuclear attack FCDA has been developing a modified system of public warning signals. As soon as the new system is adopted, notification will be given. Revisions in the instructions should then be made. Until that time the following information is official.

The Federal Civil Defense Administration has recommended for nation-wide use a set of public signals for warning of impending enemy attack. One is the "WARNING RED" (formerly called Red Alert) signal, indicating that enemy air attack is imminent. Another is the "WARNING WHITE" (all clear), indicating that attack or further attack by hostile aircraft is improbable. FCDA recommends that these signals be given by siren or whistle. Another is the "WARNING YELLOW" (formerly called Yellow Alert), indicating that enemy air attack is probable. Civil defense officials will be given this warning through official communications channels, and the public through Conelrad on the radio.

Most localities have adopted the FCDA warning signals, but regardless of what type your community has, you should learn and be able to recognize them immediately. Upon the WARNING RED signal you should go right to shelter.

The FCDA "Air Raid Instructions" card can be purchased in quantity from the Government Printing Office, Washington 25, D. C. You might want to pass out copies here.

Intermission.

At this point it would be well to have a 10-minute intermission.

Family Protection

Clean out attics and cellars.

Starting right now, you should go in for "fireproof housekeeping." Don't let trash pile up around your house and always keep it in covered containers until disposed of.

Several other household precautions should be taken promptly. Nuclear bombs set off high above ground seldom cause breaks in underground gas or water mains. However, shaking and twisting of the buildings by the blast wave sometimes snaps off household inlets at the point where they enter the basement. This may allow gas or oil to flow into your cellar.

Prevent fires.

If you have a coal-burning furnace or wood stove, be sure to close all intake and indraft doors. The outdrafts may have to be left open to prevent the accumulation of ashes, trapped gases, and explosive coal dust, and minimize the danger of suffocation from gases known as blackdamp. Try to prevent sparks and do all you can to put out or cover open flames.

Should attack come without warning, take these same precautions right after the raid. Don't strike a match to light your way down into a darkened basement; gas or oil fumes may be present and an explosion or fire could result. Use a flashlight.

Home Shelters and Shelter Areas

The basement is the safest place to be. Upon WARNING RED go to the basement, lie flat along the wall nearest the direction from which you expect the blast to come. You would be even safer under a cellar work bench or heavy table. Stay away from the middle of the floor where falling beams and other objects are most likely to strike you.

Naturally, you run a risk of being trapped in the wreckage, but your overall chances of escape from the bomb in most cases are many times greater than they would be upstairs. If your basement has two exits, you will be in less danger of being trapped.

Basements protect from radiation.

Besides protecting you from blast and heat, basements also provide shielding from initial radiation. The lower you get, the more barriers against radiation there are likely to be between you and the bursting bomb. In the cellar you will be shielded not only by other buildings, but also by earth and the cement foundations of your house. Earth and concrete in quantity are good radiation barriers.

Build a shelter in your home.

One of the best protections you can provide for yourself and your family is a home shelter. FCDA has prepared a manual telling how to construct a shelter either in the basement or the yard. The manual is entitled *Home Shelters for Family Protection in an Atomic Attack* and can be purchased from the Government Printing Office for 30 cents.

These shelters can be built by the average householder and are relatively inexpensive. The cheapest, a wooden lean-to built in the basement at a cost of about $40, provides protection. More comfortable shelters offering even greater protection can be built at higher cost. All of the shelters in the manual have been tested under actual nuclear explosion.

Shelters are becoming increasingly important as protection against radioactive fallout.

If you live in a State where there is danger from sudden storms like tornadoes or hurricanes, you may have a storm cellar or something similar. Such forms of shelter may give protection against nuclear bombs.

If you have no basement, select the strongest part of your house for a shelter area. This might be the space under the stairway, or a corner away from windows, where two walls join.

Prepare shelter.

If possible, provide two exits from your shelter area. Nail wire screen or heavy cloth across any glass area such as windows, French doors, and mirrors. In or near your shelter area keep a supply of canned food, drinking water in sealed jars, and first-aid supplies.

Also store in or near the shelter area a portable radio, shovel, rope, hose, axe, flashlight, and a fire extinguisher or a bucket of sand.

Let's discuss a few of these items.

Keep first-aid materials on hand.

First-aid kit.—The injuries that you'll have to care for are the usual types such as burns, breaks, bumps, and cuts. Unless you are able to take care of the minor injuries of your own family, they may go unattended. It is wise to take the American National Red Cross Standard First-Aid Course and to keep the first-aid manual and first-aid supplies on hand. The Red Cross has published a civil defense supplement to the American National Red Cross First-Aid testbook.

Pass out copies of the FCDA leaflet "Civil Defense Houshold First-Aid Kit." The leaflet can be obtained in quantity from the Government Printing Office. Or, you might have the list of first-aid kit items in it mimeographed for distribution here. If available, it would be well to have a typical first-aid kit on display. Find out from the local Red Cross about first-aid classes. Know where to refer students who wish to take the course.

Flashlights.—Get at least two. They may be your only light for awhile. Get extra bulbs and keep fresh batteries available.

"A stitch in time saves nine."

Fire extinguishers.—You can't do much against big fires, but you will be able to control a small fire in your own house before it has time to spread. Make sure everybody in the family knows how the fire extinguishers work. This subject will be taken up more completely at the next session.

Sheets of vinyl film, heavy paper, cardboard, or cloth.—You will need something to put over the windows after an explosion to keep out cold, sparks, and possibly radioactive dust.

Other emergency supplies.

Radio.—A portable battery radio will prove useful. It may be your main source of information on what is going on in your city or what you are supposed to do. This should be kept where you can pick it up on the way to your shelter area.

Bucket.—It is quite possible that water mains may be broken or sewage disposal plants hit. A pail with cover, for toilet use, should be available in case the plumbing is damaged.

Precooked foods.

Food supplies.—You should keep a 3-day supply of emergency rations on hand. Canned foods, canned milk, and other things that can be eaten without being heated, are especially desirable. A good idea is to start buying a few things at a time and store them for an emergency.

Drinking water.—It is a good idea to keep on hand several covered containers of water for emergency use. In addition, it may be advisable to close the main water valve leading from the street immediately after attack so that the water in the household pipes and the hot-water tank will continue to be safe for drinking. This amount should tide you over the immediate post-attack period. Be sure to turn off the heat to the hot-water tank, whether the main water valve is turned off or not.

Even if the water service continues in your area, don't use tap water for drinking purposes until you have received official information that the city system is safe. This is primarily because disease carriers such as typhoid germs can enter from damaged water systems. Boiling will kill most germs that get into damaged water mains, but will not affect radioactivity.

This is a good place to stop for a summary. List points on the blackboard as you get them in answer to your questions. Ask such questions as: **Summary.**

(1) What do you do if you are outdoors and a nuclear bomb explodes without warning?
(2) What do you do if you are in your home?
(3) What things would you do when you hear warning red?
(4) How do you select a shelter area?
(5) How do you prepare a shelter area?

Keep windows and doors closed.

The home after attack.—Keep all windows and doors closed for several hours after a nuclear attack. In fact, better leave them shut until you receive official information that there is no lingering radiation in your neighborhood. Should you get an official report that there is serious radiological contamination in the vicinity, better cover all broken windows with blankets, vinyl film, heavy paper, or cardboard.

Personal decontamination.

Should you have reason to believe that you have been radiologically contaminated, take off your outer garments outdoors or in the basement and lay them aside. Then wash yourself, especially your hair, using warm water and plenty of soap. As soon as possible check with civil defense radiological personnel to determine if you are contaminated and whether your clothing must be disposed of.

Neighborhood Protection

Neighborhood organization is needed.

If your neighborhood is not organized for civil defense, you should take steps to do so now. This can be accomplished through the local warden organization. A neighborhood warden, responsible to the local chief of the warden service, should be appointed.

If you are the neighborhood warden, adapt the wording here accordingly.

With your help, the neighborhood warden can organize the neighborhood. He will have to conduct meetings, survey the resources of the neighborhood, make a block map, make arrangements for billeting evacuees or moving residents out of the neighborhood in an emergency, set up neighborhood training courses, assign and train neighborhood residents in civil defense duties, and carry out several other measures.

He must have the help and cooperation of everyone in the neighborhood. The warden will appoint a staff of assistant wardens to help him perform his duties.

Every person must know what to do.

You, as civil defense volunteers, must tell people what to do. The more people who know what to do in an emergency, the more lives will be saved and the less chance there will be of panic. Of course, while some wardens may be willing and able to handle all the neighborhood instruction, they have many other duties to perform. You can assist the warden by beginning in your own neighborhood and passing on the information you have acquired here.

You could at this point take time for discussion, suggestions, and questions on neighborhood defense.

Conclusion

Face the facts.

While nuclear weapons are terrible things, survival is possible. We must face the facts and talk about them until you and your friends and neighbors realize that survival is possible. Some persons may want to avoid all talk of the nuclear weapons because they refuse to face the facts. However, children will learn at school that there are chances of survival and will pass on

Learn the facts.

their learning to their parents and other adults. By learning the facts you can increase your chances of survival many times.

Be prepared.

You must prepare. Your family and your neighborhood must prepare. But survival begins with you. You must know what to do before, during, and after attack.

You have been interested enough to attend this course and you should convince others of the need for it. Everyone must know what to do. A few who do not know what to do can cause panic. Facts will kill fear that causes panic. So, learn the facts and spread the word, and you will help save yourself, your family, your community, and your country.

If time and film are available, show FCDA film, "Survial under atomic attack." If time permits, a discussion could be held on the film.

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FIRE FIGHTING AND RESCUE WORK

Instructor's objective: To develop an understanding of how to prevent and fight fires and how to rescue trapped persons.

One of the biggest threats to you and your family in the event of an attack on our cities would be fire. This session will be devoted to a discussion of fire and will include some precautionary measures that every homeowner should take. We'll also discuss emergency rescue. Although a 2-hour session will not make you a fire or rescue expert by any means, you will be better prepared to help yourself and others when an emergency arises.

In wartime fire is the greatest killer and destroyer.

Fire during World War II actually caused more deaths than the explosion of bombs. Eighty percent of the damage by airborne weapons in World War II was caused by fires. Fires caused by the A-bombs also resulted in heavy loss of life in Japan.

In modern warfare there would be innumerable fires. These might be caused by nuclear weapons, incendiaries, high explosives, sabotage, or combinations of these. The problem of fire fighting is brought right to your door, both at your home and at your place of work. Regular fire forces will be engaged with major fires and undoubtedly will be unable to deal with the small fires.

City residents can fight fires.

English cities point with pride to large areas where fires started in every home, yet in each instance the buildings were saved. In one area, 150 fires were burning at once, but only two required the assistance of the regular fire service in extinguishing them. The citizens took care of the rest.

Day-to-day fire prevention is good insurance against fire in either peace or war. The FCDA booklet *Fire Fighting for Householders* contains many suggestions for making your home less susceptible to fire.

Fires are commonly extinguished by either cooling the burning materials with water or by smothering with chemicals or other materials. Smothering deprives fire of the oxygen required to support burning. Removing the burning material is another method of putting out fires.

Home fire extinguishers.

Every household should have such simple fire fighting equipment as an ordinary garden hose with faucet adapters for attaching it to household faucets.

Several buckets of water or sand should be on hand for emergency use.

The hand pump.

One of the simplest fire extinguishers for general home use is the hand pump, a 5-gallon water pump equipped with 25 to 30 feet of hose. The double-action pump will deliver a stream 25 to 30 feet. It is well to have a large container of water available either inside or outside the home. Care should be taken to prevent freezing in cold weather.

Other types of fire extinguishers are effective if used according to directions. Even a wet mop, broom, or rug can be an effective weapon against fire.

Ladders.

Essential to home fire protection are ladders for use inside and outside the home to enable the householder to reach higher and more inaccessible parts of the structure. Ladders have a twofold purpose—fire fighting and rescue work.

Ladders should be stored and maintained in a usable condition, and members of the household should know how to handle and use them.

Nearby fires might threaten your home.

Whenever large fires threaten your neighborhood, precautions should be taken to see that flying embers do not start fires in and around your home. Rooftops, sides of your house, and your yard may have to be wet continuously with your garden hose as long as the danger exists.

If a fire breaks out in your home, you and your family may be the only ones available to fight it. You should not stop fighting the fire unless it gets beyond your control or threatens to cut off escape. If you have to withdraw, close doors and other openings to retard the spread of fire through the structure.

Improvising a rope.

If you are caught on an upper floor, you may have to escape by tying together sheets or blankets to form a rope. Tie the sheet or blanket to a heavy piece of furniture or fixture such as a radiator or water pipe, drop the other end out the window and lower yourself hand over hand.

If you are trapped in a room by fire, be sure the door is closed to hold back heat, flame, and smoke as long as possible. Open a window and call for help.

What to do with utilities.

In an emergency everyone must know exactly what to do about household utilities. The officers of your local utility companies have cooperated with your civil defense organization to develop such procedures.

The instructor should have specific information from the local utility companies so that he can inform the group.

Fire fighting for Householders.

Now, we will see a short motion picture called *Fire Fighting for Householders*. Many of the fire-prevention and fire-fighting points discussed in this session will be shown in the film.

Show movie.

Fire fighting and rescue work are closely related.

Fire fighting and rescue work are often closely related. You should know something about rescue since there will never be enough skilled rescue specialists immediately available in any disaster situation. If you possess some knowledge of rescue work, you may be able to help save lives.

You can make some preparations now which may save your life or the life of a neighbor in an emergency. Here are some of the things you can do:

1. Know your neighbors and, to the extent possible, become familiar with their daily routine. If homes in your area are demolished, you can tell rescue workers what neighbors might be trapped in demolished homes.
2. Know the location of your neighborhood shelter, if there is one. **Shelter areas.**
3. Select the safest shelter area in your home and prepare it for possible use. Let your neighbors know of your preparation.
4. To guide rescue workers, mark the shelter area in your home and the access to it. The location of utility connections and emergency tools should be prominently marked.
5. Discuss any rescue information received—whether by newspaper, radio, television, movies, or class instruction—with your family and friends, and practice basic rescue methods with them.
6. Become trained in first aid. Standard first-aid skill will be helpful in rescue operations. In addition, special knowledge of how to carry casualties over debris and remove them from overhanging floors will be valuable. **First aid.**

Types of casualties.

If you remain calm and know what you can do safely, you can assist casualties. Casualty classifications are:

1. *Surface casualties.*—These are victims found in open areas who can be seen readily and removed with relative ease.

2. *Lightly trapped casualties.*—These victims will be found mostly pinned or wedged beneath or between furniture or other heavy objects in buildings. A surface casualty can also be lightly trapped.
3. *Heavily trapped casualties.*—These victims will be found in buildings which have suffered considerable structural damage. Such casualties may be wedged between collapsed floors, roofs, or walls, under an excessive amount of debris, or in places requiring debris clearance, or tunneling prior to the victim's removal. Trained rescue teams are needed to extricate them.
4. *The dead.*—These victims may be found anywhere within a disaster area. In general, they should not be removed until tags with identifying data have been attached to them.

Rescue of heavily trapped persons by specialists.

In an emergency, you can help rescue surface and lightly trapped casualties. Efforts of nonspecialists must be limited to the rescue of these in order to avoid becoming casualties themselves or further endangering the life of a victim. Rescue of persons heavily trapped or in dangerous locations must be done by trained rescue teams. However, a person with knowledge of light rescue could assist a trained rescue man.

Whenever possible before removing a surface or lightly trapped casualty, be sure that:

1. The extent of the injury is known.
2. Proper first aid is applied, if needed.
3. A tag with identification and other pertinent information is completed and attached to the casualty's wrist or ankle.

Caution is a primary requirement when searching for casualties. Carelessness in searching can result in the searcher's becoming a casualty, thereby increasing the rescue problem.

Moving casualties.

Special training in methods of moving injured and unconscious people is necessary. An injured or unconscious person should never be moved unless it is absolutely necessary to save him from death or further injury.

When movement is necessary, a seriously injured person should be moved on a stretcher. At least two persons are required for this. A door or boards at least 16 inches wide can be used if no stretcher is available. Lay the stretcher alongside the victim and slide him on it as gently as possible. Lift the stretcher carefully and carry it without jolting.

Three persons can transport a victim for short distances without a stretcher. Kneel in a row on one side of him, slide your hands under his body, and clasp him to your chest before rising to a standing position. All three must lift at the same time to avoid hurting him further.

Never "jackknife" an injured person into a car or other vehicle. Broken bones may add to his internal injuries or even kill him.

Identification of fatalities.

Do not remove a dead person from where he is found unless a tag with identifying data has been placed on him. Sometimes the address where he is found is the only clue of identification.

Report any knowledge of neighborhood fatalities with as complete information as you can to civil defense authorities so that next-of-kin can be informed. This information might also be useful in furnishing proof for the payment of insurance claims, settling inheritances, and similar legal matters.

Training is necessary.

Every member of your family should be trained to protect your home from fire and be familiar with basic rescue techniques. If you and your family know the right things to do, and practice them, you will be more likely to do the right things automatically when the need arises. *Home Protection Ex-*

ercises will be very helpful in getting yourself and your family ready for an emergency. So will *Fire Fighting for Householders.*

Distribute copies of these booklets. If the time permits, review the highlights of the booklets with the group.

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DEFENSE AGAINST BIOLOGICAL, CHEMICAL, AND OTHER FORMS OF ATTACK

Instructor's objective: To develop an understanding of biological, chemical, and other forms of warfare.

All forms of attack are possible.

Although emphasis is placed upon the nuclear weapons as our greatest potential threat, biological, chemical, and high explosive weapons might be used by an enemy in an attack upon our country. Therefore we must be prepared to protect ourselves against all forms of attack.

Biological Warfare

Definition.

Biological warfare (BW) is the intentional use of living organisms or their toxic products to cause death, disability, or damage in man, animals, or plants. Biological warfare includes what is sometimes called "bacteriological" or "germ" warfare, which is a specific type of BW.

Types of BW agents.

Attacks might be made with three different types of BW agents.

1. *Living agents.*—These are organisms which cause sickness or death in people, animals, or plants. You have seen plant-killing insects at work. You also have heard of bacteria, viruses, and other disease-causing organisms.
2. *Toxins.*—These are poisons produced by living organisms. The kinds of toxins most likely to be used in biological warfare come from bacteria; examples are diphtheria and botulinum toxins.
3. *Plant growth regulators.*—These are chemical substances which abnormally accelerate or inhibit the growth of plants resulting in their death; an example is weed killers.

As it is most improbable that new disease agents will be developed by man, the main dangers from BW lie in exposure through unusual means and routes.

Aerosols.

One means of waging BW is by aerosols—fine sprays or mists. In this way harmful bacteria could be floated through the air. Examples of small aerosols are those produced by household atomizers and DDT bombs, which can be effective in localized areas. For instance, a disease-filled aerosol could be introduced into the ventilating system of a building.

Large scale biological warfare attacks with aerosols could also be made against densely populated areas by means of aircraft.

Subversives.

On the other hand, an enemy might prefer to work secretly. He could use subversives to pollute food and water supplies. Enemy agents might put poisons or disease-producing organisms into city water supply systems.

Attack on food supply.

Many months before the outbreak of open warfare, undercover workers might try to cut down our food supplies by spreading plant diseases such as wheat rust or animal diseases such as fowl plague.

There also are many diseases that could be used to attack the animals upon which we depend for both food and clothing. Anthrax, or wool sorters' disease, is one example. Foot-and-mouth disease is another.

Fowl plague and Newcastle disease might be used against poultry. Rinderpest might be aimed especially at cattle or sheep; most other domestic animals and man are immune to rinderpest.

Many kinds of plant diseases such as blights and rusts, and insect pests such as Japanese beetles and corn borers could be used to attack food crops.

Growth regulators could be used to destroy food plants.

Combating Biological Warfare

In combating BW some of the things you and your neighbors can do are:

Rules for combating BW.

1. Keep yourself and your home clean. It is more difficult for disease to get a foothold in clean places, and people who keep clean are less likely to get sick.
2. Report sickness promptly. If you or a member of your family becomes sick, never fail to tell your doctor. If you live on a farm, report any increase in the number of diseased animals and the appearance of uncommon diseases in your animals to your veterinarian or your State livestock sanitary official immediately. Report plant diseases or unusual insects you find in your garden or fields to your county agricultural agent.
3. Give all possible help to authorities. If you're asked for a blood sample, give it. If you are told an injection or vaccination is necessary, have it done.
4. Don't rush outside immediately after a bombing. Unless you have a civil defense job to do, stay inside until the WARNING WHITE (all clear) signal is given.
5. Don't take chances with food and water in open containers. Bottled or canned foods are safe after a BW attack if the containers aren't broken. Foods in the open might be contaminated by BW agents. If in doubt, boil all food and water for 10 minutes before eating or drinking.
6. Don't start rumors—don't believe wild stories. A rumor may start a panic. So disregard wild talk about biological warfare and don't pass it on to your friends.

Chemical Warfare

This part of the session will cover defense against chemical warfare. We will learn something about war gases. We will talk about what a person can do to protect himself and his family from the effects of an enemy gas attack, how to safeguard a house against gas, and the emergency treatment of persons who have been exposed to gas.

Chemical warfare is the intentional use of chemical agents to cause death, injury, or irritant effects. Chemical agents may exist in either gaseous, liquid, or solid form. War gases, smokes, and incendiaries are the three main groups of chemical agents. Most of the discussion in this session will be about the war gases.

Definition.

We Know More About Chemical Agents Than We Realize

Practical defenses against chemical attack have been developed by the United States Army, and can be learned by the civilian population.

Don't let chemical warfare frighten you.

Try to get some group participation. Ask the following question and give people enough time to answer before continuing your part.

Poison gas is really nothing new. Can any of you think where we encounter it in everyday life?

You handle chemical agents daily.

Before moving into a house or apartment, people sometimes have it fumigated. Fumigating gas is poison gas but we don't fear it, we're just careful.

Out-of-doors we use deadly gases to kill scale and other diseases that affect our crops.

On the farm, moles and rats are sometimes best eliminated through the use of a chemical agent, but we don't worry too much about handling it.

Again, everyone knows that if a person drops some strong acid on his body it will produce a severe burn; or, if he exposes his bare skin to poison ivy, a rash developing into itching blisters often results. These effects, though less severe, are somewhat similar to the effects on the skin produced by exposure to mustard gas.

Or, most of us have suffered a smarting of the eyes, and perhaps of the nose, as a result of exposure to household ammonia or red pepper. These effects are similar to those of tear gases and certain other irritant agents.

When gases such as these disable a person we know what to do. Every week there are stories in the newspapers of persons overcome by gas from stoves or automobile exhausts, who are revived on the spot and quickly nursed back to good health.

Unprepared people suffer most.

Military poison gas first accomplished its deadly mission when the soldiers were surprised and untrained. Now, with more information about gases, we should be better prepared to defend ourselves against them and to treat casualties effectively.

In addition, the extent to which gas might be used is limited by the distances airplanes can fly or the weight they can carry. Large-scale gas attacks against densely populated areas could produce serious effects on unprotected personnel.

Although the Germans did not use gas during World War II, large stocks of both old and new war gases were found in Germany as the Nazi troops surrendered to the Allies. Soviet troops captured some of these supplies. A factory used for producing nerve gas was located in East Germany, an area now occupied by the Communists. Gas warfare is, therefore, one of the risks that we civilians must be prepared to face.

Nerve gas and blister gas most likely to be used.

Gas might be used in an attack upon a community, either alone or combined with other types of weapons. Nerve gas and blister (Mustard) gas are those which would most likely be used by an enemy against this country.

What Is Defense Against Chemical Attack?

Before giving your discussion, try to get a definition and some response from the group.

Definition.

Defense against chemical attack is the application of protective and precautionary measures by a person or group, against the use of chemical agents.

In planning for defense against chemical attack the main defensive measures are warning, detection and identification, protection, treatment following exposure, and decontamination. As it is very unlikely that advance warning of gas attack will be possible, the establishment of a separate gas warning system by siren is not considered practicable. At the present time, the best protection against gas attack when an air-raid warning is sounded is to go to shelter and put on a protective mask, if available. The respiratory system and the eyes would then be protected not only against chemical but also biological agents and radioactive dusts.

Shelters.

Enclosed spaces such as unventilated rooms or buildings will furnish good protection during a gas attack. These spaces should not be occupied after the attack has passed, however, since the agent may have gotten in

and been trapped in amounts which would become dangerous under prolonged exposure. Sealed rooms give more protection. Large numbers of small or family-type shelters, gas-proofed if possible, are preferable to group or collective shelters because of their wide dispersion. The latter would be desirable for vital installations such as headquarters, control centers, and hospitals. Any type of shelter may become vulnerable to gas if high explosive or incendiary bombing accompanies chemical attack.

Protective masks.

Protective masks under consideration include:

1. *Special heavy duty masks* for rescue workers and firemen;
2. *Organizational or duty masks* for wardens, medical personnel, and other civil defense workers who have to enter contaminated areas;
3. *Inexpensive masks* suitable for mass production for the rest of the population.

Masks for the inhabitants of small urban or rural areas are not considered necessary at present. Obviously masks are not suitable for infants and another type of device is being developed which will protect them for an appreciable length of time and require little or no attention or manipulation by adults. Development of this device should be completed in 1955.

The requirement for heavy-duty masks for fire and rescue workers can be met by making slight alterations in commercially produced fire and rescue masks, many of which are now standard equipment for fire departments, chemical plants, and mines. When such changes have been made, these masks will also provide satisfactory protection for the respiratory tract against chemical and biological agents and radioactive dusts.

The Army Chemical Corps has been engaged for several years in developing noncombatant protective masks adaptable for civilian use. These are a duty or organizational mask suitable for civil defense personnel and a lightweight, inexpensive mask for civilians.

Development of the duty or organization mask suitable for civil defense personnel who have to enter and work in contaminated areas, have been completed. This mask is designed to furnish protection equivalent to that afforded by the standard Army service gas mask, and will cost about $6. It is on the FCDA Federal Contributions list.

Testing of the civilian protective mask is expected to be completed in 1955. This mask is designed to afford protection at least for the duration of a single attack. It will be capable of mass production and will sell for a nominal price. It can be made in sizes suitable for adults and children.

Protective clothing.

Protective clothing for the general public is impractical. Protective clothing may at times be required for civil defense rescue, first-aid, and decontamination personnel, and for wardens, engineers, and firemen, when their duties make it necessary for them to enter contaminated areas. Clothing which liquids cannot penetrate will be required, since contamination may be in liquid form. These needs can be met by rubberized, plastic, or oilcloth raincoats and garments, rubber boots, and gloves. However, even these materials are penetrated in a relatively short time by liquid nerve gas and blistering agents.

Atropine self-injection devices for treatment of nerve gas casualties are being stockpiled by the FCDA. Kits for the treatment of gas casualties developed by the Armed Forces have been proposed for inclusion in the stockpiling program.

Decontamination.

Following the explosion of chemical munitions, liquid contamination may result. Ordinarily, streets, buildings, and contaminated areas will be roped off by civil defense wardens and the kind of contamination indicated by appropriate markers.

GAS (May be solid or liquid, as well as gaseous form)	DETECTION (Odors are not dependable guides; may vary with different persons. Many war gases have no odor when pure)	IMMEDIATE EFFECTS (Symptoms are progressive depending on concentration of agent and duration of exposure)	PROTECTION Protective mask and clothing	FIRST AID
NERVE GASES..... (G agents).	ODOR.—Usually odorless; if any, may be faint, sweetish, fruity. APPEARANCE.—Colorless to brown liquid.	Contraction of pupils twitching muscles, difficult breathing, headache, nausea, paralysis of respiratory organs.	Protective mask and clothing.	*Speed is essential.* As soon as symptoms appear, inject atropine. For liquids splashed in eye or on skin, wash with water. Victim should be given artificial respiration. Remove casualty from contaminated area.
BLISTER GASES... (Mustard, Lewisite).	ODOR.—May smell like fish, garlic, geraniums. APPEARANCE.—Colorless to dark brown, liquid may be oily.	Skin blisters, injury to eyes, air passages, and lungs; severe eye pain, nausea, vomiting.	Protective mask.	For liquids: in eyes—flush out, use eye ointment; on skin—blot off, use protective ointment. Cut away and discard contaminated clothing. Remove casualty from contaminated area.
BLOOD GASES..... (Hydrocyanic and cyanogen chloride).	ODOR.—Very faint, if any, like peach kernels or bitter almonds. APPEARANCE.—Colorless.	Irritation in nose, throat, eyes. Tears, rapid breathing, coughing, choking, nausea, headache, convulsions and coma.	Protective mask.	Give amyl nitrate, artificial respiration if breathing has stopped or is weak. Remove casualty from contaminated area.
CHOKING GASES.. (Phosgene, Diphosgene).	ODOR.—New-mown hay, green silage, green corn, fly paper. APPEARANCE.—Colorless.	Coughing, choking, tightness in chest, nausea, vomiting, headache, tears, rapid shallow breathing.	Protective mask.	Rest; keep warm; loosen clothing; evacuate victim from area.
VOMITING GASES. (Adamsite).	ODOR.—Practically none. APPEARANCE.—Canary yellow or white smoke.	Inflammation of the nose, throat, eyes; headache; pain and tightness in chest; tears; uncontrollable coughing; violent sneezing; ropy saliva flow; nausea; vomiting; mental depression.	Protective mask.	Lift mask from face briefly to drain saliva or to vomit. Recovery should be prompt without medical treatment. Few cases need medical attention if mask is left on.
TEAR GASES..... (Chloracetophenone, Brombenzyl-cyanide).	ODOR.—May have a light, agreeable odor, or none. APPEARANCE.—Colorless.	Sharp irritating pain in eyes, copious flow of tears, desire to rub eyes, irritation in nose, stinging feeling on moist skin. Liquid burns like strong acid.	Protective mask.	When gas cloud passes, take off mask, face wind, loosen clothing. Blot eyes. Do not rub. Effects last only short time.

Smoke screens are used generally to prevent observation rather than to cause injury. Such smoke may cause injury, particularly if inhaled in closed spaces or close to the point of release. These will probably not be used against the civilian population. **Screening smokes.**

Incendiaries can cause serious burns. The principal incendiary agents are thermite, magnesium and its alloys, white phosphorus, and combustible oils. **Incendiaries.**

Special training is necessary to enable one to extinguish incendiary fires.

You might arrange with the local fire department to conduct training classes in extinguishing incendiary fires.

Have the chart on page 40 reproduced so that copies may be provided for all class members.

At the end of this session I am going to distribute to each of you a chart showing the classification of war gases, their effects, how to detect them, how to protect yourself against them, and the first-aid treatment for them. As we haven't covered all the information on the chart in this session, you might want to study the chart at home.

Other Forms of Attack

In addition to nuclear weapons and chemical and biological agents, an enemy would probably use high-explosive weapons, sometimes called HE, in an attack upon our country. In general, protective measures already discussed would be effective in case of an attack with HE.

Following an attack there may be unexploded bombs. These should not be touched or disturbed in any way. They should be reported to a police representative or a civil defense warden.

Another form of attack is sabotage which might occur before, during, or following an enemy air raid on our country. Such subversive activity might be directed against our water and power supplies, communications and transportation systems, manufacturing plants, and other vital installations. **Sabotage.**

The Federal Bureau of Investigation is responsible for sabotage control. Local police and internal guard forces are responsible for guarding facilities against acts of sabotage.

Pass out gas chart.

References

Federal Civil Defense Administration

Civil Defense Against Biological Warfare, TM–11–10, 1953 (Government Printing Office, Washington, D. C., 20 cents).

Health Services and Special Weapons Defense, AG–11–1, 1950 (Government Printing Office, Washington, D. C., 60 cents).

Department of Health, Education, and Welfare

Public Health Reports, November 1953, Reprint No. 3221, *Public Health Aspects of Civil Defense* (Government Printing Office, Washington, D. C.).

Department of the Army

Possible Enemy Chemical Warfare Agents card, GTA–3–2 June, 1952 (Government Printing Office, Washington, D. C.).

Department of the Army Manuals:

FM–21–11 *First Aid for Soldiers.*

FM–21–40 *Defense Against Chemical Attack.*

FM–21–41 *Soldiers Manual for Defense Against CBR Attack.*
TM–3–215 *Military Chemistry and Chemical Agents.* (Also: Air Force TO–39C–5–18.)
TM–3–216 *Military Biology and Biological Warfare Agents.*
TM–3–220 *Decontamination.*
TM–3–240 *Field Behavior of Chemical Agents.*
TM–3–290 *Individual Protective and Detection Equipment.*
TM–3–350 *Gasproof Shelters.*
TM–8–285 *Treatment of Chemical Warfare Casualties.* (Also: Navy NAV MED P–1328 Air Force AFM 160–12.)

SELECTING YOUR CIVIL DEFENSE JOB

Instructor's objective: To bring about a fitting close to the course.

Notes to Instructor.

During this session make a final check to see if anyone needs guidance. Bring all informational records on group members up to date.

Your recommendation concerning the jobs for which you think the volunteers are qualified should be discussed with the local heads of the services seeking volunteers so that when the volunteers reaffirm their choices, the heads of the services will have some knowledge of their qualifications.

Your Place in Civil Defense

Overall picture.

In this course we have covered a great deal of ground. We have tried to consider the overall picture of civil defense as well as information on what the enemy may be expected to do. We have discussed evacuation principles, self-protection, nuclear defense, defense against poison gases, what to do before the firemen get to the scene, some rules of rescue, industrial protection, and civil defense in natural disasters. Don't forget that we have dealt only with the highlights of these subjects. There is a great deal more for us to do in order to protect ourselves, our families, and our neighbors from disaster.

The events of the past few years have shown that war no longer consists of soldiers fighting on the battlefield while civilians sit at home in peace and support them. War can now come to the home front. We all know, some of us from personal experience, that one of the principal objectives of modern warfare is to bomb, destroy, and panic the source of military support, the civilians. If we can't do our job, then we are unable to support our troops. Without that support we could not win a war. Therefore, each of us has a part to play on the home front.

Need for early assignment and training.

In the blanks below fill in the names of the services in your community which need volunteers. List the services and encourage enlistment according to the order in which the services will be able to assume the responsibility for the training and assignment of volunteers. If there is too long a lag between the close of this course and the beginning of specialized training, many of these volunteers may lose interest.

Local needs.

We need _____ (Give number) trained civil defense volunteers in the _____ _____ (Name of services) fields of civil defense work. All of you now are ready to take specialized training and fill some of those important jobs.

Additional training.

You will all have an opportunity to volunteer for additional training to qualify you for an important civil defense job. Some of you may want to specialize in _____, or _____, or the _____ service. Your selection and assignment depends upon three considerations: What you like to do, what your community needs, and what your qualifications and general background best fit you for.

Placement

Plans for guidance and screening.

At this point, state the procedure you intend to follow for guidance and placement. Following are two suggested procedures:

1. Invite to this closing session the heads of the services most urgently in need of volunteers at this time. Let each one talk to the group for no more than ten minutes, telling:

(a) Specific jobs to be done.

(b) Types of workers he can use.

(c) Need for volunteers. Let the speaker sell the jobs to the volunteers, especially in the case of necessary jobs which have little public appeal, such as mortuary services.

Following the talks, assign the speakers certain rooms where they may talk to the volunteers in groups according to their special interests. At this time the service specialist may sign up his volunteers for instruction or may merely take their names, promising to let them know when other basic or specialized training classes will get under way.

2. Get your group together around a conference table and:

(a) Give them the latest information about the number of volunteers required in the community for each of the services.

(b) Discuss the requirements for specific jobs.

(c) Let your group members discuss the jobs they are most interested in performing.

(d) Sell the jobs which need to be filled. The volunteer should have the job he wants, but it's up to you to make him want to do the job that needs doing.

Closing Exercises

After the meeting to discuss jobs, bring your group back for short closing exercises. Plan these exercises well in advance. You may invite a special speaker to give a closing address on civil defense. If your local and State civil defense policy proivdes for awarding completion certificates, ask the speaker to award them at the end of his address.

I want to thank you for your attention, your good attendance, and your wholehearted participation in this course. I know what it has meant to you to give up time you could otherwise have spent with your families and friends.

In acknowledgment of your completion of the basic course for civil defense, I have asked Mr. _____

(The Mayor, CD Director, or CD training director)

to award the certificates of completion.

Now I wish to present Mr. _____.

Guest awards certificates.

Reference

Federal Civil Defense Administration

Civil Defense Manpower and Personnel Policy, Advisory Bulletin No. 174, September 16, 1954.